Capital Assets and Infrastructure

Exhibit 5

Infrastructure Price Index

GASB 34 Implementation Training

Spring 2003

Price Index* for Highway Construction

Year	Bridges	Percentage	Roads/Streets/Sidewalks	Percentage
1960	21.7	.14	23.0	.15
1965	24.8	.16	25.0	.17
1970	38.2	.25	34.8	.23
1971	40.0	.26	36.8	.25
1972	40.7	.26	38.6	.26
1973	45.4	.29	42.5	.29
1974	61.7	.40	57.9	.39
1975	60.6	.39	58.1	.39
1976	57.2	.37	56.3	.38
1977	59.7	.39	59.8	.40
1978	70.7	.46	70.7	.48
1979	88.6	.58	85.5	.58
1980	100.0	.65	97.2	.65
1981	94.9	.62	94.2	.63
1982	90.0	.58	88.5	.60
1983	86.7	.56	87.6	.59
1984	88.2	.57	92.6	.62
1985	98.1	.64	102.0	.69
1986	98.0	.64	101.1	.68
1987	100.0	.65	100.0	.67
1988	111.0	.72	106.6	.72
1989	118.4	.77	107.7	.72
1990	117.8	.76	108.5	.73
1991	112.5	.73	107.5	.72
1992	108.4	.70	105.1	.71
1993	105.3	.68	108.3	.73
1994	109.0	.71	115.1	.77
1995	119.5	.78	121.9	.82
1996	121.6	.79	120.2	.81
1997	132.7	.86	130.6	.88
1998	133.4	.87	126.9	.85
1999	138.3	.90	136.5	.92
2000	146.9	.95	145.6	.98
2001	136.9	.89	151.2	1.02
2002	154.0		148.6	

*Excerpt from *"Price Trends for Federal-Aid Highway Construction,"* prepared quarterly by the Federal Highway Administration Office of Engineering.

This index changes each year and these percentages will not be valid after a new index is issued for 2003.

Establishing Rural Road/Street System Values – The "Depreciation Approach"

Excerpt from *"The Link,"* Kentucky Transportation Center Newsletter, Winter 2001

You need the following facts to establish current-day depreciated value:

1. **An Inventory:** the length, width, and type of roads and streets, as well as length and width of sidewalks and bridges.
2. **Age:** If you do not know the actual date the structure was built, use a "best guess" after consultation with your fiscal court or council.
3. **Construction Cost:** Use either the actual construction cost or an estimated historical cost.
4. **Lifespan:** Suggested life spans are listed in *Roadway Infrastructure Life* on this page
5. **Salvage Value:** At the end of a life span, a structure retains the value of the right-of-way and the substructure. Salvage value is estimated at 20% of the construction cost for paved roads/streets and bridges, and 10% for unpaved roads and sidewalks. Salvage value does not depreciate. It is subtracted before the yearly depreciation begins.

The Inventory

You probably already have this information. It is simply the name or roadway number, whether it is paved, unpaved, or resurfaced; a subdivision street or city street, a bridge or sidewalk, along with length and width. For purposes of calculating value, it is best to convert length/width to square feet.

The Age

If you don't know an actual construction date, you may find this information in court records. If not, use the "best guess" approach. On resurfacing, the age is determined by when the resurfacing was completed, not by the age that the original pavement was laid.

Construction Cost

It will probably be quite difficult to find the original construction costs of all your structures. If you do not have this information, a historical cost can be calculated (See Determining Historical Cost)

Calculating the Value

In this straight-line depreciation approach, the original investment (construction cost minus salvage value) is depreciated over the life span of the structure by dividing the cost by the life span and multiplying by the number of life-years remaining.

This becomes the base line for all future depreciation and improvements that will be required in order to comply with GASB 34 accounting standards.

Roadway Infrastructure Life

Unpaved Roadways: 15 years
Paved Roadways, Streets, Subdivision Streets: 25 years
Resurfaced Roads/Streets: 12 years
Bridges (all types): 50 years
Sidewalks (all types): 30 years

These life spans have been simplified for audit purposes and are not specific to construction materials or methods. Unpaved roadways are chip seal, gravel, dirt, or any surface other than bituminous concrete or Portland cement concrete (PCC) pavements. Paved roads and subdivision streets can be either asphalt or PCC pavements. Bridges of any construction type have been averaged into one expected life span, as have sidewalks and resurfacing projects. This simplified method also has been applied to estimated construction costs, which are outlined below.

Determining Historical Cost

Determine what the pavement/bridge/street/sidewalk would cost at today's construction costs using the chart below to obtain the estimated construction cost. Multiply this figure by the appropriate year of construction index percentage (See Price Index table on page 1) to determine the historical cost.

2001 Estimated Construction Costs

Unpaved Roads/Streets: $30/LF (Linear Foot); $1.50 sq. ft.
Paved Roads/Streets: $55/LF; $2.75 sq. ft.
Subdivision Streets: $125/LF; $6.25 sq. ft.
Bridges: $2,000/LF/24 ft. wide; $83.34 sq. ft.
Resurfaced Roads/Streets: $10/LF; or $.50 sq. ft. (plus salvage value)
City Sidewalks: $2.50/sq. ft.

These estimates are for rural, low-volume roadways/streets/bridges typical of those owned by local governments in Kentucky. They are "best guess" estimates arrived at after review of federal government websites and consultation with industry and local agency associations. These estimates have been reviewed and endorsed by the Kentucky Association of County Engineers and the Kentucky Chapter, American Public Works Association.

Calculations are based on a 20-foot width and include curb, gutter and sidewalk. Cost of sidewalk construction is quoted by square footage because of the varying widths of sidewalks.

Bridge construction costs are for bridges spanning 20 feet and greater, regardless of material. Under 20 feet, the structure should be considered part of the pavement and not calculated separately.